

251

243

[252]

Corn is gathered in all stages of ripeness: the first edible ears are welcomed after the winter's dry provender. Green corn is boiled, made into bread, etc. Green corn may be partially roasted in the husk by placing it in a roasting pit over night. The husk is stripped off and the corn dried. Such ears are boiled during the winter, when they have the taste of fresh corn. When the the ears are ripe and hard the crop is gathered by the men and women who planted it, with the assistance of any one who is willing to help. A woman breaks off the ears as she walks along, throwing them into the burden basket on her back. The corn is spread to dry in the sun, either on the roofs of the rectangular shades, against which ladders conveniently lean, or on heaps of brush around which little emblems of dung are built to scare off rodents. Corn is placed in the stone storage chambers either in the form of husked ears or it is shelled and heaped in a corner. Seed corn is husked and pland in a separate pile in the storehouse. Pumpkin, squash, watermelon, and sunflower seed are selected for sweetness, dried, bundled in a cloth, and set to one side in the chamber. When going up to the plateau for the winter, two small sacks of corn are carried along: they return for more as it is needed. The corn may be stored in three chambers: that in the first is eaten during the winter, that of the second during the spring planting period, and of the third, only a little may be eaten, not all. "We don't eat it all: we don't plant it all." This remainder is saved against the contingency of flood, etc.

[73]

Slayella has five storehouses convenient to his fields; these were all emptied of the previous year's crop by the end of September. His family (p. 312) did not plant much this year as they have no women to grind their corn, so that only one storehouse will be filled. This is intended to supply himself, his four adult sons, and the five grandchildren. If this proves insufficient, more will be given them without compensation by Wood, his younger brother's son, who has plenty this season. Jim, who plants in his parents' field, stores his corn with theirs.

244

In former days two kinds of beans (maddis) were raised, one a big red variety, the other yellow. These were planted in the cornfields on the same day as the corn, placed midway between the cornhills, 10-12 cm. deep, four to a hole. Both crops ripen at the same time. Surplus [25] beans are also stored in the stone chambers for winter food, leaving enough to plant in the spring.

251

Squash (*Aemil*?) is planted like beans, at the same depth, four seeds to a hole. Two varieties were known in Slayella's boyhood, one large and round, the other long. Squash ripens in October. It is brought home by burden baskets full and piled up. The rind is hacked off with a knife and the squash set aside to dry somewhat. The stem end is cut

away and the seeds scraped out and collected. After further drying, the 257
flesh is sliced spirally from side to side, beginning at the stem end, in a
strip 2.5 to 5 cm. in width. This coil, 1 to 1.5 m. long, is hung from a pole
to dry in the sun. While it is still pliable, it is folded back and forth on
itself into a bundle (*Aamshut'fles*), 30 to 45 cm. long, and bound with
one end of the strip. This is set aside to dry thoroughly before it is
placed in the storehouse for winter use. Squash so dried will keep
through an entire year. Melons are also grown.

Sunflowers (*di'fles*) are grown for their seed. Cotton (*Ocoteppium lepi* 241
Lewton) is raised from seed obtained from the Hopi; the only use for 249
this product is in the strike-a-light. The seeds of wild food plants are 272
not planted; some, such as pigweed, grow in the fields. Peaches and figs,
modern foodstuffs, are eaten fresh. Peaches are also torn in two and 251
pitted, while figs are opened, before they are spread on the rocks to dry.

Two varieties of tobacco are known, *des*, and *hah'du,lu'ne* (Coyote's 249
tobacco; *Nicotiana trigonophylla* Dunal). Myth has it that the second
was grown by Coyote for his own use. Both grow wild on the plateau and
in the canyon above the village: their leaves are similar, but the smoke
tastes somewhat differently, according to the natives. Tobacco (both
varieties?) is grown only on the plateau. A mesquite tree is cut down
and burned. The tobacco seeds are thrown into the dead ashes (the soil
is not dug up). Willow is not used as a substitute.

WILD FOOD PRODUCTS

These are a valuable adjunct to the food supply, especially from the 221
autumn until spring during the residence on the plateau. During this 222
period they lead a wandering life, families going off in the fall to a place
where someone had reported piñon nuts lying plentifully on the ground;
winter finds them to the east, hunting in the Coconino Basin, dropping
down to the benches of the Grand Canyon in the spring for mescal, and
so on. Women and children are sometimes left to gather seeds while 462
the men go off to trade.

Mescal (the agave plant), which grows on the canyon benches, is
ripe in May when the flower stalk is 30 to 60 cm. tall. The plant is
severed entire by pounding a chisel-shaped buckthorn stick (*hah'p'o'n*) 442
about 1 m. long, 3 cm. diameter, against its base. The outside leaves of 252 ●
the inverted plant are trimmed of their green portion with a special
hatchet (*aguidjd*). This consists of a broad stone blade set in a slot 442
midway in the length of a short handle, 30 cm. long, (sometimes of piñon
wood), where it is held fast with glue or pitch and by lashings. A load of

- 252 thirty or forty plants is carried home. A pit (malpama'a; *amdi*, ground) 1.5 m. in diameter, but of a lesser depth, is dug in sandy soil, not in gravel, else the steam would escape. Green or dry brush of any description is piled into the hole to the height of a meter above the ground; the uppermost brush must be dry. Stones the size of one's fist are spread over this to a depth of 10 cm. The pile is fired early in the morning, before sunrise. After three or four hours, when the wood is nearly consumed and the stones are red hot, several men (not women, because of danger from the flames) pound on the pile to reduce it level with the surface of the ground (7). Meanwhile women pile the mescal all around the pit to have it conveniently at hand. The pit is apportioned in sectors among several people; when the mescal is put in it, some plants are stood on edge to mark these divisions, the others are then packed indiscriminately in between. Long green grass, gathered by the women at the time the fire was started, is first carefully arranged over the plants, and then piled in to a depth of 5 cm. This is then covered with a layer of dirt, 15 cm. deep. It is now 8 or 9 a.m., depending on the quantity of plants. Forty-eight hours later the pit is opened, and grass spread over a convenient space to receive the roasted mescal.

366 Mescal paint (p. 197)²⁵⁶ is made from the dried juice which coats the stones. (The plants of the lowest layer have been burned black.) These stones are boiled for a few minutes to remove the sediment; the liquor is poured off and boiled until it thickens; then red paint is stirred in to thicken it further. After boiling longer the paint is reduced to a doughy consistency; the small quantity obtained is rolled into a ball.

- 252 The leaves of the roasted mescal may either be chewed at once to obtain the pulp and juice, or they may be mashed and spread in a thin layer on an arrow reed mat to dry. When half dried the fibrous layer is turned over to dry further. While it is still flexible, one edge is folded back and the opposite edge folded over to meet the crease. This preparation (ria'l) will keep indefinitely; it is soaked in cold water for an hour to make a sweet drink.

- 285 Arrow reed mats (*diakwied*; *did'*, arrow reed) measure 110 by 80
251 em. and 75 by 60 em., the first dimension being the length of the reeds. Thongs or sinews are twined through the reeds at half a dozen points. Mescal and yucca products, peaches and figs, are spread to dry on such mats.

- 222 The leaves of the young plantain ('ot't'ed) are boiled and served as
252 we do cabbage.

The fruit (*aité's*) of the prickly pear cactus (*alded*) ripens at the same time as peaches (September). The spiny fruits are broken off

with tongs, rolled about on the ground with a bundle of brush, and²²²
 finally rubbed individually with a rag to remove the spines completely.²⁵²
 A burden basket full is carried home, the fruits opened and spread out to²⁵¹
 dry; sometimes the seeds are removed. When desired these are soaked
 for a few hours and squeezed to make a sweet decoction.

Mormon tea furnishes a drink: the stems are dried in bundles. [272]

Mesquite pods (*iyd'a*) are ripe at the end of September. There is
 but one way to prepare them. They are gathered when dry and pounded
 on the grinding slab. The excessively hard seeds are winnowed from the
 ground pod. The latter is stirred into cold water and allowed to stand
 for several hours. This drink is stirred before it is imbibed. The pods,
 being sweet when dry, are often chewed at odd times.

Yucca fruit (*amōnd'i*) ripens on the plateau at the end of September.
 A layer of this is spread on a bed of dry sticks, a meter in diameter. The
 sticks are fired until the rind of the fruit is burned black, when they are
 removed with the tongs (*ailde'*), and thrown into a pile, on which water
 is sprinkled. The burned rind is removed, and the seeds, separated from
 the pulp, prepared by mashing with a mano. The flesh is spread to
 dry in a layer, 1 cm. thick, on a carpet of Mormon tea sprigs: this sheet
 is folded for storage. All drying fruits will spoil if exposed to rain. This
 preparation will keep for half a year. Bits of the sheet are broken off
 to eat dry, or they may be boiled.

A variety of seeds are gathered: a partial list includes pigweed
 (*agudol'*); goosefoot (*Uryddaj*); *ailt'e*, *gōn*, *i'ēli* (all three unidentified);
 juniper berries (*adjuq*), and piñon nuts. Sprays of ripe pigweed and
 goosefoot are allowed to dry for a week; the pods are then rubbed
 between the palms into a tray basket so that the seeds may be winnowed.
 These are roasted in the parching tray and ground. Half a kettle of
 water is brought nearly to a boil and the meal stirred in to make a mush.
 Pigweed leaves are boiled with salt, sometimes with cornmeal added, and
 eaten like cabbage.

Silt'e' grows only in open glades on the highest part of the plateau. The²²²
 harvester walks along with a small burden basket in her left hand into²⁵²
 which she raps the seeds with a seed beater (*ailt'aria*; *aria*, to beat),
 emptying the smaller into a larger burden basket on her back from time
 to time. The seeds are ground, although they are unripe, and stirred
 into boiling water to make a thin gruel. They are sometimes parched,
 ground, and eaten dry with bread.

The seed beater is used only in this connection. It is a flat scoop²⁸⁵
 of wickerwork (Fig. 3). The warps are doubled at their midpoints: at⁴¹²

285 intervals twigs cross these which are bent down the sides of the scoop
412 to the handle, where all the loose ends are bound together. While the
specimen at hand has a thong drawing the tip toward the handle, it is
probable that this was intended to hold the beater in shape only until the
green twigs dried.

Garcés records that beside mescal, juniper berries were eaten.¹
222 Piñon nuts, which ripen in October, are parched and ground (without
252 removing the shells); the ground meat is spread on bread. The nuts
may also be ground without parching and stirred into boiling water to
make a thin gruel.

(285)
(412)



Fig. 3 (80.3-1575). A Seed Beater.

263

[222]

[917]

Wild bees hive in dead logs and the flower stalks of dead mescal.
Parties of children go out, picnic fashion, to gather the stalks, split them,
and collect the honey. Rock salt (191's) is collected from a cave in the
cliff on the south side of the Colorado, where there are stalactites of it.
This is ground. Much less than we are accustomed to is used.

HUNTING

224

[262]

Hunting is a man's second occupation, for he relies mainly on his
field products. Flesh is part of the dietary the year around, but particu-
larly during the fall and winter when they reside on the plateau. Antelope,
mountain sheep, and deer are said to abound in the order named, while
cotton-tails, jack-rabbits, and squirrels are plentiful. Hunting in the
gorges of the Grand Canyon is really a hazardous enterprise. One
instance was recorded of a wounded ram charging his pursuer and
hurting him from a narrow ledge. Yet killings are sometimes tame affairs:
one man standing at the door of his house shot a mountain sheep but a
hundred meters away. They frequently descend the canyon close to the
village.

- 224 animal at bay. They're bred to furnish good hunters, and castrated.¹
 [232] Dogs are called by name; such as *wabwaded*, labia minora (a male dog),
 552 *gi'n,ikdwaid*, referring to age, the dog having gray hair, and *lde*,
 painted (a brown dog with white patches.) Any dog is called to 'go!yd,
sagd, sagd, dog, come, come, and driven off with *esl'*, *admitgd*, go away.

PREPARATION OF FOOD

- 252 Primitive peoples have more methods of preparing their food than
 they are commonly credited with. The Havasupai, for instance, have
 innumerable ways of preparing corn, only a few of which—the result
 of casual observation—are recorded here.

- 4/2 The grinding slab, on which nearly all wild and cultivated seeds are
 ground, is roughly rectangular, 80 by 80 cm., by 10 cm. thick. A smaller
 slab, carried with a moving camp, is 60 by 30 cm. A shallow oval, but
 [324] nearly rectangular, depression is pecked in one face with a hammerstone.
 The stone of which they are made is so tough that the process of produc-
 ing a proper trough is very lengthy: on this account they are highly
 prized. The mano (*ra'ha'djd'a*) is roughly a prolate spheroid, 17-22 cm.
 long, with short diameters of 7.5 and 10 cm. The woman sits in front of
 252 the slab which rests flat on the ground, with its face slightly tilted toward
 her. The corn, beans, etc., are first pounded with the end of the mano,
 and then crushed with a pounding, rocking motion of the stone. The
 meal is brushed off forward with the side of the hand into a tray basket.
 The chaff is separated by swinging the basket, throwing its contents into
 the air, and at the same time blowing off the lighter particles.² The clean
 meal is then replaced on the slab to be pulverized by grinding with an
 additional slight rocking motion, forward and back, and to a lesser extent
 sideways. There can be no doubt that the shape of the metate depres-
 4/2 sion and mano among Indians in general is in part the result of the miller's
 movements. When not in use, the grinding slab is turned upside down
 with one edge resting on the mano to keep it clear of the ground. A brush
 is used for cleaning the metate. This is a bundle of mescal leaf fiber,
 20 cm. long., bound with a cord for a distance of 4 or 5 cm. at the center.

- Stone mortars (*'wigwetu'tid*; *'ut*, stone, give, something, *tetid*, to
 [252] pound) are also used for pounding corn, piñon nuts, or dried meat.
 These measure 15 to 20 cm., with a hollow 10 cm. in diameter. The pestle
 (*ra'ha'djd'a*, mano) is also stone.

[231] ¹These are not used for transportation, nor eaten so far as I know. The dogs of sixty years ago are
 said to resemble those of today, which in turn are in general similar to the North American breeds figured
 by Allen. Is it possible that they are relatively unaltered and therefore worth study?
²Illustrated in Mason, G. T., (2), Plate 100.

1 [i.e., hunting dogs.—Analyst]

Seeds of all descriptions are parched not only to roast them, but to dehydrate them somewhat, rendering grinding easier. The kernels of corn, etc., are tumbled about with live coals in the parching tray by a swinging, sinuous, rotary movement. Finally, the lighter charcoal is separated from the grains with the same motion, throwing it up from the far edge of the tray and blowing it away. Any charcoal that remains is picked out. 252 ●

Cooking is usually done in the clay vessels (*hamduguetalúia*; *hamdi*, clay pot) but boiling (*tulúmtá*) in baskets is carried on at the same time. (415) Small stones, heated red, are dropped, with the aid of a tongs, into a basket filled with water. These are replaced by others when cool. The food is stirred in when the water is boiling; the remaining stones are picked out when it is cooked.¹

Green willow tongs are used on hot stones, but better wood, such as ash, may be used in tongs for handling hot or prickly objects, stirring stews, etc. Tongs (*atúda'*) are simply green branches, flattened on one side, with a kerf at the midpoint, so that they can be bent double, and bound until dry. They measure 40 to 50 cm. long; a smaller specimen is 20 cm. Crooked sticks and convenient twigs are also used for stirring, 4/2 as forks, etc. Horn ladles are used in cooking as well as in eating. 4/5

A cooking vessel (*múlduguetalúmia*, cactus, something, boil) is sometimes improvised from the barrel cactus (*múldil*, possibly *Echinocereus*) when on hunting expeditions. Occasionally the same device is used at home. The spines are burned off, one end cut away, and the pulp removed, so that it can be used for stone-boiling. "Wild cabbage" 252 (*ak'íed*), cornmeal, meat, etc. is cooked in this.

Green corn is usually cut or shelled from the cob and ground to a pulp on the grinding slab. Water is brought nearly to a boil before the corn is slowly added, stirring it into the water with a stick while the pot remains on the fire. When it comes to a boil, it is set aside. Corn is not boiled on the cob as a rule.

Green corn is cut from the cob, mashed, and boiled with unripe pumpkin cut into small chunks.

Squash flowers are boiled until the mass cannot be reduced further,² they are then fished out with a twig and mashed to a pulp on the grinding slab. Meanwhile green corn, cut from the cob, is boiling in the liquor. The pulp is then added and the whole is boiled to make a sweet dish.

¹Food is never cooked in a skin or a pouch.
²V. Lanchetta, (et. 14, 190).

252
[251] Ears of green corn in their green husks are laid to roast on a small bed of coals, or buried in hot ashes, until the outer husks are thoroughly charred. The husks are stripped back, the ends of the cob trimmed clean, and the ears are tied in pairs by their husks to be hung up until some casual visitor comes by. Green corn is less commonly roasted in underground pits. The characteristic mode of eating corn on the ear is to break off the kernels with the thumb nail, catching them in the palm of the same hand. When the hand is full, these are poured off the side of the hand into the mouth.

Bread is made of green corn cut from the cob and ground. This pulp is moulded into cylindrical masses, wrapped in green cornhusks and baked in the ashes. When husks are removed the solid cakes may be eaten as bread.

For dumplings, cornmeal (*leydjiddva*, corn, ground?) is kneaded into a stiff paste with hot salted water. The dough is rolled between the palms into cylinders, bits pinched off, and rolled into balls, 3 cm. in diameter. These are dropped into hot water and occasionally stirred while they boil a few minutes.

[171] Wafer bread (*hpa*, from Hopi *piki*) of cornmeal is baked in the characteristic Pueblo fashion on a flat slab (*hcvahaiyddid*), a meter long and half as wide, supported over a fire. It is made either of white or blue corn, but never by mixing varieties.

Beans (*madipa*) are parched before they are ground. Bean flour mush (*madipad*, beans, ground) is made by slowly stirring the flour, into water that has been brought nearly to the boiling point. When the mush boils, it is removed from the fire.

Sunflower seeds are parched and ground, when they may be eaten with the sweet mescal drink or a decoction of dried peaches. Sometimes they are parched, mixed with parched corn, and ground fine; then it is eaten dry by the pinch.

Squash is boiled. The dried strips (*hamitapa*) are broken into bits and boiled until soft (*hamitadla*); this is sweet. The rind is sometimes hacked off fresh squash, and the fruit cut into small pieces, discarding the seeds, before it is boiled; this is not sweet.

Squash, melons, peaches, figs, and even corn are eaten as soon as they show the first signs of ripeness, so glad are the natives at the appearance of an edible green. Unripe fruits cut off before they reach maturity, as by a flood, are not discarded, but furnish at least something succulent to chew on.

[251] Meat is sliced and cured by drying. It is usually necessary to pound it between two stones before it is cooked, and then it is commonly

stewed. It may be placed in warm water to simmer; then bean flour is added to thicken the stew. Squirrels should be eaten fresh. The viscera are removed, and if it is to be boiled, the skin, head, and tail as well, but not if it is to be roasted. Rabbits are roasted in the ashes and possibly in roasting pits. Doves and quail are eaten, but only infrequently, although they abound at harvest time. Only quail eggs are eaten. 252

Fish are neither caught nor eaten. (These live in the Colorado but not in Cataract Creek.) Fish are not tabooed, but the Havasupai are afraid to eat them because they never have eaten them. Snakes, frogs, and lizards are not eaten; in fact, they mock the Walapai for eating the last mentioned. 262

Most cooking is done out-of-doors and meals are served there also. The cooking vessels, trays of fruit and bread, and vessels of drink are placed together on the ground. A vessel of ground salt stands near by, but very little is used, and practically none at all in the process of cooking. The whole family groups itself about these, within easy reach of the one or two *pièces de résistance*. Bits of meat are fished from the stews with fingers, twigs, or knives, while the mush is scooped or sopped up with a bit of bread, flat sticks, little horn and wooden spoons, or even with three fingers. Eating manners are fairly decorous by our standards. Even small children help themselves, but forwardness, quarreling, and especially pilfering before meals, is met by sharp reproof. As a rule women and children eat with the men, but when there are male visitors the former often wait their turn. In such a case, for example at a dance, the men leave a fair share of the food. As a rule three meals are eaten during the day, but that at midday is somewhat inconsequential. The others are substantial; breakfast on rising, and the last meal after sundown. Everyone eats irregularly throughout the day, for to whatever camp one goes there is always cookery in progress; corn roasting, a bowl of peaches brought home, and so on. While considerable is eaten at each meal, no food is ever wasted, and the natives do not stuff. Those who have seen the Zuni in the Hopi villages ridicule their habit of expressing thanks after a meal. 264

COMPARATIVE NOTES

Havasupai agriculture is one of the few traits shared with Pueblo culture. The general distribution of cultivation through the Americas is well known, but there has been no attempt at fixing its northern limits in the Southwest in detail. 171 241

1928.]

Spier, Havasupai Ethnography.

119

transversely at the end of a shaft. The Havasupai use a horse scapula¹⁷¹ but without hafting it.¹⁴¹²

Cotton is raised by the Hopi, Tewa (except possibly Pecos and Taos),¹⁷¹ Pima, Maricopa, Western Apache, and Tepehuane. It is not grown by²⁴⁸ the Navaho, Zuni, Acoma, or the Tanoan Pueblos.^x

Tobacco is widely used in North America though it is not every-¹⁷¹ where grown. In the Southwest and the adjacent territories its cultiva-²⁴⁹ tion has been noted for the Zuni, Hopi, Navaho, Havasupai, Yavapai, San Carlos, Pima, Southern Diegueño, and the Mayas of Mexico.³ Smoking is known to have been customary among neighboring tribes, who did not raise the plant: Cocopa, Akwa'ala, Moapa, Gosiute, Paviotso, Washo, Wind River Shoshoni,⁴ and generally in California. The Havasupai habit of planting in ashes without turning the soil is also the custom of the Hupa.⁵

Unfortunately, I do not know which species the common Havasupai tobacco is. Its name, *úes*, however, is connected with Southern Diegueño¹⁹² *op* (*Nicotiana attenuata*), Shasta *op*, Takelma *o'p'*, Crow *op* (*N. multi-*¹⁷¹*culvis*), Hidatsa *o'pe* (*N. quadrivalvis*), probably Washo *plukur*, and possibly Pima *stopalstafá*, "like tobacco" (*N. trigonophylla*).⁶ There is a similar extension of the name "Coyote's tobacco" though again to distinct species; Havasupai (*N. trigonophylla*), Southern Diegueño (*N. attenuata*), and Pima (*N. Bigelovii*).⁷

Mescal (agave) is gathered and roasted in pits by most, if not all,¹⁷¹ the non-Pueblo peoples and perhaps by the Pueblo and Mexican tribes²²² as well. It is an item of some importance for the Jicarilla, Mescalero, White Mountain and San Carlos Apache, Navaho, Havasupai, Paiute,²⁵² Yavapai, Pima, Cahuilla, and Huichol.⁸ It would be worth knowing how far this distribution corresponds with that of the plant. Pit roasting is probably absent from the Basin and the Plains, and from California except among the southern desert tribes. But much farther north, in the Plateau and adjacent sections of the Northwest Coast, it is the characteristic mode of preparing roots. The mescal embargos are probably always pried off with a chisel-edged stick (Havasupai, White Mountain¹⁴¹² Apache, and Pima) and trimmed with the peculiar hatchet (Havasupai,

¹Cushing, (d), p. 111, 204; Russell, (d), 68, 67; Franciscan Fathers, 363-6. Mohave specimen in the Anthropological Museum, University of California.

²Spier, (f), 20.

³Wetland: Curtis (XII, 26) denies that the Hopi plant tobacco; Carlsbier, 329; Russell, (d), 119; Spier, (e), 248; Bazzellier, (n), 48; Ginkler, (e), 368.

⁴Lewis (h), 216; Kroeber, (n), 200.

⁵Ginkler, (n), 37.

⁶Lewis, (f), 198. Washo name from Doctor Lewis, 1928.

⁷Ginkler, (e), 146-149; Curtis, I, 17-19; Palmer, 647; Carlsbier, 327; Russell, (d), 70; Barrows, Lambalta, (n), 13.

120 *Anthropological Papers American Museum of Natural History.* [Vol. XXIX,

171 White Mountain and San Carlos Apache). Like the Havasupai, the
222 Yavapai and White Mountain Apache dry it in large cakes on a layer of
[255] sticks and make a concoction of the dried product.
[412]

171 The method of harvesting wild seeds by beating them with a scoop
222 into a basket held in the free hand is characteristic of the Basin tribes
412 and those in adjacent California and Arizona. A woven seed-beater is
222 used by the Kaibab Paiute, Panamint, Paviotao, Gosiute, Ute, Northern
Maidu, Klamath, Modoc, Achomawi, Atsugewi, and Cahuilla. The
Northern Shoshoni and Salinan substitute tray baskets for these; the
Western Apache and sometimes the Salinan a stick. The Yavapai also
gather the seeds in the characteristic manner.¹ There are differences in
the shape and technique of the beater which would repay investigation.

171 A number of tribes share a definite procedure prior to a deer hunt
224 which corresponds to the Havasupai meeting at a fire and praying to the
sun. The Huichol obtain power from a fire on the evening before the
hunt; Luiseno-hunters stand in the smoke to be freed of the effects of
any breach of social observance. The Maidu meet at a fire to offer to
the spirits; the Achomawi and Atsugewi have a ceremony in the evening
of the first day of the hunt at which the leader chews roots which he
throws toward the mountains. Bourke states that the Paiute and Wal-
apai (but not the Mohave) sing and dance before a deer hunt, but he does
not specify the procedure. There is at least a partial analogy in the
Western Apache sprinkling pollen and praying to the sun.² The Tepe-
can and Hasinai also have special observances.³

[833] The Havasupai also hold continence a prerequisite for success in the
hunt. This is true of the Huichol, Paiute, Walapai, Maidu, and is at
least suggested by the Luiseno data. It may be general.

I do not know that the deer drive of the Havasupai constitutes a
definite type. Driving them into a *cul de sac* or over a cliff may be very
common. It has been noted for the Navaho, Yavapai, Maidu, and
Gosiute.⁴ The chute-and-pound method is widely distributed over the
Basin-Plateau and Plains, but is unknown to the Havasupai.

The use of a deer head, or that of an antelope or mountain sheep, as a
disguise in stalking is a rather widespread practice. In the west it is
recorded among the Mimbres Apache, Navaho, Zuni, Hopi, Havasupai,

¹Fowell, 128; Coville, 253; Lewis, (h), 234; Chamberlin, 341; Mason, O. T., (a), 480; Dixon,
(a), 188; (a), 212; Barrett, (a), 237; Krueger, (a), 45; Lewis, (a), 187; Mason, J. A., (a), 120, 143;
Bourke, (a), 131; Corbousier, 328.

²Lombetta, (a), II, 60, 61; Sparkman, 109; Dixon, (a), 160; (a), 212; Bourke, (a), 172; (a), 502,
504; (a), 478.

³Mason, J. A., (d), 128; Bolton.

⁴Stephens, 337; Franciscan Fathers, 475; Matthews, (d), 239; Corbousier, 328; Dixon, (a), 160;
Chamberlin, (h), 235.

mortars as well. Mortars are the characteristic utensil of the central Californian tribes and those of the northern Basin.¹ As might have been anticipated from their geographic position some of the western groups apparently favor the use of mortars rather than metates: Pima, Diegueño, Luiseno, and Cahuilla. (Fig. 5.)

Parching seeds by tumbling them about with live coals in a shallow basket is a method widely used among Californian, Basin, and the western rancheria peoples of the Southwest. It is recorded for the Havasupai, Yavapai, Pima, Kaibab and Shivwits Paiute, Panamint, Paviotso, Lemhi Shoshoni, Lower Californians, Luiseno, Patwin, Northern Maidu, Klamath, Achomawi, and Atsugewi. (Fig. 5.) The Pima also cook in this fashion using a shallow pottery vessel. The Lower Californians sometimes substituted a turtle shell. Doubtless many others shared the practice: the Salinan, at least, did not.²

Wafer bread is a familiar Pueblo product, probably in use in all the towns, but certainly among the Hopi, Zuni, and Acoma. It is also prepared by the Havasupai and Navaho but is not known to the Pima.³

Fish is not an article of diet of many of the Southwestern rancheria people. This is not altogether a matter of the absence of fish, for they must be at least as abundant as in the Basin where they are eaten. There is a definite taboo ranging from the horror of the Navaho to the mild sentiment of the Havasupai. These tribes include all the Athapascans, (except the Lipan), the Caddoan Taovayoses, the Havasupai, Walapai, Yavapai, and Zuni. Outside of this restricted area fish are eaten: Cochiti, Lipan, Hasinai, Pima, Cora, Tepecano, Seri, Southern Diegueño, Apache-Yuma, Mohave, Yuma, Cocopa, Washo, and all the Basin Shoshoneans.⁴

With regard to other tabooed animals little can be said because of the fragmentary nature of our information. Lizards are not eaten by the Havasupai, Mohave, Pima, Salinans of San Miguel, the Shoshoneans of Kern River, and the southern Yokuts. But the neighboring Yavapai, Walapai, and Paiute did not despise them, while in California, the northern Yokuts and the Miwok eat most reptiles.⁵

¹Cooper (Chittenden, 203); Mohave (Whipple, 115); Salinan and Yokuts (Mason, J. A., (a), 137-138); Washoe (Shoshoni and Fort Hall Bands) (Lewis, (a), 174).

²Corbush, 326; Powell, 129; Lewis, (i), 234; (k), 136; Coville, 352; Lewis, (a), 174; 180; Baugert, 206; Spierman, 193; Powers, 230; Dixon, (a), 140; (c), 212; Kimball, 194; Russell, (d), 68; Mason, J. A., (a), 130.

³Stevenson, M. C., (b), 361; Cushing, (d), 333; Sedgwick, Ch. II; Franciscan Fathers, 305, 307; Russell, (d), 68.

⁴Gusinde, (c), 1st ed., 139; Matthews, (c), 106, 107, 110; Kroeber, (a), 276-277; Danzert, 140; Carpenter, 320; Russell, (a), 62; Hrdlicka, (c), 45; Whittemore, 36; *Handbook of American Indians*, I, 348; Mason, J. A., (c), 346; Moore, 183; Spier, (d), 338; Truett, 374; Chittenden, 204; Lewis, (i), 200; Mooney, (b), 1036, 1037; Lippé, 42; Stephens, 357; Franciscan Fathers, 214, 307; Matthews, (d), 239; Holton.

⁵Kroeber, (a), 377; Russell, (d), 63; Mason, J. A., (a), 122; Corbush, 326.

Six types (Fig. 6) are recognized: 'burden baskets (gəḏə'k), water bottles (adud), shallow bowls or trays in twine (gəḏə'ā") and coil (gə'ā") (285/415) stone-boiling bowls (An'apəwəḏə'min, water, something, boil) in both techniques, and parching trays (gəḏə'wəḏə, lit. old twined tray). Burden baskets, water bottles, and parching trays are made with twine weave.

While the weaving is quite coarse and uneven, with the exception of a few coiled pieces, many of the baskets are surprisingly water-tight. However, most baskets for liquids are rendered tight with some sort of coating, mescal juice or cornmeal mush. Trays in which mush is placed soon become impervious; the mess is sometimes rubbed into the interstices with that end in view. Small water-tight trays are used as pannikins to drink from. Water bottles receive a heavy coating of pison pitch as well as soapweed paste.

Burden baskets are conical; some have a slight reverse curve near the apex which produces a nipple effect (Fig. 7). Two hoops to receive the carrying band are inserted in the side of the basket somewhat more than a third of the distance from the rim. After the basket is completed pressure is applied to make this side flat so that the basket will not roll from side to side on the back. These baskets are generally made in three sizes: that used by the women measures about 60 cm. in diameter at the mouth, and 45 cm. in height; a smaller size used by half-grown girls is about 50 cm. by 45 cm.; that of small girls about 35 cm. by 32 cm. (482/415/285)

Trays are used to hold seeds, meal, fruit, mush, and a host of other foodstuffs (Fig. 8). Twined trays are roughly of two sizes, although the variation is considerable; 40 cm. in diameter by 9 cm. in depth, and a smaller size 30 cm. by 6 cm. Occasionally these are quite conical. Fewer coiled trays are made: these are about the same size. They are somewhat flatter on the bottom than the twined ware. Parching trays are simply old twined trays, as their name implies, which are given a protective facing. Only the larger size of tray is used for this purpose. (285/415)

Stone-boiling disappeared years ago so that descriptions of the baskets used for this process are somewhat vague. Apparently they (252) were the same size as trays but quite deep, really bowls. One basket said to resemble them is 38 cm. in diameter and 23 cm. deep, quite globular, with a mouth slightly smaller than the body (Fig. 9). Smaller coiled bowls, such as those now sold to tourists, may have been used for stone-boiling. Cushing figures a coiled boiling basket, bottle-shaped, with rounded base and wide mouth.¹

(1b), Fig. 302. This shows the bundle foundation which my informants denied was ever used.

140 *Anthropological Papers American Museum of Natural History*. [Vol. XXIX.

323 has burned down, the coals are raked away from the center, the pot set right side up on the ground, and buried, inside and out, in coals. A small amount of brush is then set ablaze on top of this, presumably to create a draft. After baking all day and night, the pot may be removed next morning. Only one pot is fired at a time. These vessels are said never to have cracked in firing.

- [252] Cornmeal mush is always the first thing cooked in the vessel. A ladle full is given to every corner, more being cooked in the same pot as the supply wanes, in the spirit of ascribing inexhaustibility to it. Pots are supported on three stones when cooking.

[356] Sometimes the bottom burns when cooking so that fine cracks appear, although the vessel does not break. A sort of "alkaline clay," obtained from the creek bed, is smeared over the faulty spot, beyond which no further attention is required.

[439] Pottery is obtained from the Hopi for storage uses, but not for cooking.

[276] Clay pipes (*dmd'lu'u*) are made of material obtained from the creek bed. The bowl, 5 cm. high, is fitted with an arrow reed stem, 7.5 in. long, in one side. Cigarettes (*urdamkw'diga*) are made of cornhusk, but not of reeds.

SKIN DRESSING

281 A Havasupai man's sole specialized product is the tanned deerskin.
[462] It is strictly a sex-limited industry, the handling of the skin from flaying the carcass to the finished moccasins or woman's dress is man's work alone. It is also the chief article of trade, which is, on the whole, [439] another male activity.¹

The fresh skin is stretched on the ground hair side down, with large stones on the neck, tail, and legs, and with smaller ones along the edges. After four or five days of drying in the sun it is as stiff as a board. If the skin contains much fat, it is dried in the shade, otherwise it will putrefy. The rawhide is sprinkled with water until it can be rolled into a loose cylinder, in which condition it can be stored for future use for as long as three or four months, by which time the insects will have gotten at it.

To dehair the rawhide, it is tied down in the creek to soak for a day and night. Dehairing commences with the dawn the next day, not because the sun would dry the hide, but because the process is laborious.

[114] ¹Unidentified: the creek is heavily charged with lime salts.
Cushing observes that these people are famous among other Indians for their buckskins [(a), 433].
[fail to see any superiority over the products of neighboring tribes, or those of other North American Indians represented in museum collections.

pot at its middle. This is illustrated for the Pima, Yavapai, Havasupai, [17] Mohave, Cahuilla, and Southern Diegueño. Navaho jars are taller [252] 323 and narrow; San Carlos are said to be cylindrical with round to conical bases. Shivwits pottery is also pointed at the bottom.

Perhaps corresponding to the Havasupai custom of cooking corn-meal mush in the new vessel, the Cocopa cook it, smear it on the vessel, [252] but throw it away,¹ while the Pima and Papago pour flour paste inside and out of the red hot pot, and the San Carlos coat it with a mixture of clay and *sphaeralcea emoryi*.

The Havasupai pipe is exceptional in having a reed stem fitted in [17] the side of a clay bowl. The nearest form is that of the Diegueño which [276] has the clay of the bowl pinched out at a sharp angle into a short stem.² This would appear to be merely a bent tubular pipe were it not for a nipple below the bowl which is suspiciously like that of our own clay pipes. Elsewhere in the Southwest and California the tubular pipe is used; e.g., Navaho, Western Apache, Jicarilla, Luiseno, Washo, Achomawi, and Atsugowi.³ It is interesting to note that the older pipes of the Cheyenne were straight tubes of bone or stone.⁴

Skins are dressed by the Navaho by a process practically identical [17] with that of the Havasupai. Descriptions from other tribes are so meager [281] that I do not know how far details are similar. Some of the Southwestern tribes at least do not smoke the skins, (Navaho, Havasupai, and Shivwits), others to the north do (Monpa—for whom it is a recently acquired trait,—Kanab, Uintah, Wind River Shoshoni, Paviotso, Achomawi, Klamath and Modoc).⁵ Smoking is also general north of the Basin and eastward in the Plains.

Skin dressing is wholly the work of men among the Havasupai, as [17] among Navaho, Yavapai, and Cocopa also. Zuni men do all the sewing, [281] and as is also customary in other pueblos (Cochiti, Hopi, e.g.) make the [462] moccasins. In this connection we note that Paviotso men make their rabbit-skin blankets.⁶ On the other hand, skin dressing and working is a woman's task in the Plains, which suggests that in the Southwest the Pueblo idea of men weaving garment materials has been transferred to the preparation of skins by men of these tribes.

¹Field notes of H. H. Lewis.

²Spier, (a), 314; Hays, (d), Pl. XI, Fig. 20.

³Franciscan Fathers, 247, 325; Matthews, (j), 314; Whipple, Fortbank, and Turner, 47; Russell, (a), 367; Parkman, 232, 210; Washo data from Doctor H. H. Lewis, 1920; Deam, (c), 214; J. A. Mason states that the Salinan and Yaudanohi used reeds, not clay or stone, but elsewhere he speaks of the Salinan "pipe" (a), 142, 163.

⁴Grinnell, (b), I, 209.

⁵Shufeldt, (b); Lewis, (j), 320ff; Mason, O. T., (c), 573.

⁶Corbousier, 302; Stevenson, M. C., (b), 371; Dumas, 146; Hough, (d), 70, 73.

sleepers is free from troublesome dreams, will sleep soundly, and arise 513
refreshed. The head of the house or a guest would sleep anywhere he
chose. A man's personal belongings were hung over his bed. Food, 352
baskets, etc., were placed nearer the entrance; the food furthest from
it to guard against animals. If the house was high enough, a pole of
which to hang blankets and skins, was fastened across above man height,
but ordinarily this was placed at one side. Cooking is usually done [252] ●
outside.

Every camp has one or more shades which shelter the common 343
domestic activities, and in some instances serve in lieu of a summer house.
The shades are built in a great variety of forms: some, in fact, are quite
amorphous. The commonest is the rectangular flat-roofed type described
above; others are simply a slanting roof, like half a gable, a quarter
sphere, like half a dome-shaped house, a barrel vault, and so on. Most
are carelessly covered with brush, with dirt banked against them.
Ladders (two poles with rungs tied on) are often provided to reach the [417]
roof of a house or shade in order to replace the dirt covering, store
corn, etc. These are sometimes logs notched on one face. A cooking
shelter may be made of boughs set up in a semicircle before the outdoor [354]
fireplace, forming a breast-high screen.

There are a series of small caves and rock-shelters (*oyd'a*) along the 342
cliffs at the top of the talus slope which were used during inclement
weather, particularly in the spring, during floods, and the uncertain [731]
period when raids were frequent, for they were conveniently located for [722]
escape up the cliffs when the alarm was given. A breast-high wall of
rocks, laid dry, was built across the opening. Poles were set vertically
in the space above the wall, others were tied horizontally across these,
and the frame was thatched. A blanket partly covered the entrance,
the open space above it providing a smoke vent.

A little ring of brush is raised for a temporary camp. This serves at [417]
least to keep out animals and the blowing wind. The White Mountain [717]
Apache have a similar usage.

Innumerable storage houses line the ledges at the foot of the cliff 343
all along the canyon, standing high above the reach of floods. A stone
wall is built about the mouth of a natural enlargement in a crevice to
form a little house of a capacity of 3 to 5.5 cu. m. (Fig. 36). The wall is
carefully chinked and plastered with a hard mortar to render it rodent [333]
proof. This is made of guano, found in the crevices of the cliff, mixed
with dirt. A flat stone is set in the little entrance and sealed with mortar

Report for the Great Father in Washington 109

Vesnor and his horse. The children scampered off through the brush on the trail that led to the village. At home there would be food, the kind they were accustomed to and for which they hungered in a way no white man's viands could satisfy. Perhaps it would be the delicious corn bread their mothers made by crushing grains of new corn to a pulp, molding it into elongated shapes which were fitted into the husks of green corn and baked in the ashes. The bread would be rich and sweet and more delicious than any hardtack ever made. Or if it were the season for little green squashes, there would be another treat. The squash, cooked, mashed and mixed with the cooked grains of new corn, was a delicacy so enjoyed that the thought of it could start the children's feet running toward home. There would be food at every house they passed on the trail, and a Havasupai shared as generously as our own ancestors did before we measured our sustenance by its cost in dollars and cents. 262
262
252

That week another letter came from Mr. Ewing demanding that I submit the annual report immediately. He added the important news that the Hackberry Day School would open in the fall as the Truxton Canyon Training School. This would be the fulfillment of the promise he had made to the Walapai that he would establish a boarding school for their children. [574]

Early Saturday morning I started to the Indian village to get additional information to incorporate in the annual report. The trail hugged the foot of the west wall. I had passed scattered wickiups, tucked back among the willows, before I came to a high, precipitous section of the wall that narrowed the passage. Bob, one of the tribe's medicine men, had told me that the god-spirit lived in two columns of stone on the rim of this intrust section. The Indians had discovered these at the time they had settled in the canyon. 000
631
776
823

I had an excellent view of the two great pillars of red sandstone, as tranquil and aloof as images of Buddha. Neither white man nor Indian could fail to be impressed by them. What force placed them in that exposed position? How had they stood through the

Report for the Great Father in Washington 113

with heavy boughs still fully leafed, kept the interior cool. An open porch sheltered the doorway. When his wife wiped the soil from her hands and entered the house, I intended to follow, but hesitated as I caught the odor of cooking meat. It came from a lard pail, propped on stones over an outdoor fire. She turned and motioned for me to lift the lid; she was pleased that they had fresh meat, for it was far from plentiful. Curious to know what she was cooking for the family dinner, I uncovered the pail. [262]

Two large glassy eyes stared at me from above the boiling water, and made the cooking rabbit seem alive. The hairy ears stood erect increasing the impression. The skinned body had been crammed into the bucket, but the head had refused to remain submerged. The lid dropped, clattering from my hand. Since then I have not cared to eat rabbit! 252

The interior of Chickapanyegi's house was arranged like all well-kept Havasupai homes: rolled bedding in the depressions in the floor where the family slept; personal possessions tied in a cloth and hung above the bed; and the inevitable pole, just below the ceiling, loaded with rabbit skin blankets, fiber mats, Navaho blankets and clothing not in use. Poles supported drying ears of corn and spirals of squash that brushed the head and shoulders as one moved about within the house. [251]

I wanted next to see Gentle Annie's home. Her house would not be neat and spotless if Gentle Annie was the housekeeper. She was old and tired from the wars she had survived and the hardships life had dealt her. I found her standing at the door of her dome-shaped wickiup. Her wrinkled face and bright black eyes held friendliness. That may have been why she was known to Indians and to whites as Gentle Annie, the only name I ever heard for her. 574

A brand-new bedroom chamber, pink roses painted on its yellow side, stood on a box near by—filled with delicately browned navy beans.

With toll-worn hands Gentle Annie reached up to the lintel, took down a hard, dry slab about twelve inches wide by sixteen

Report for the Great Father in Washington 115

sunflowers, squash, melons and pumpkins in a cloth and packed 251 them in this dry, safe place.

Through generations of experimenting the women had developed safe methods of preparing food for storage. Mold and decay must be fought or there would be famine. Beans, corn, sunflower seed, figs and peaches were dried in the usual manner, but it took an Indian's ingenuity to develop a method of drying squash and pumpkin so they would make good eating in the winter. The women first cut off the rind and allowed the squash or pumpkin to dry somewhat on the outside. They next removed the seeds, which were dried for food and for planting, then cleaned and partly dried the inside. This partly dried flesh was cut in one long spiral and hung over a pole until dry enough for storing. Many homes were so filled with drying spirals that there was little room for the family. The dried pumpkin or squash was cooked with water and served [252] as a vegetable. I was sure it would be tender and sweet but I did not get a taste.

I had seen peaches spread to dry on the sandy ground, fly-covered, dogs romping over them, ponies nibbling them. So when I saw two laughing gossiping women laying their halved peaches on the clean floor of a crevice in the canyon wall in which a family had set up housekeeping, I climbed up for a better view.

When I reached their level, to my surprise—and to his—I saw 887 a naked old man sprawled on the floor, taking a sun bath. He gave 291 me a startled glance, bounded up and scampered away among the rocks where he hid until I left the place. The women, their fat 576 bodies shaking with laughter, jabbered and pointed. The old 522 fellow would have thought nothing of his nudeness had a woman of the tribe appeared. It was the privilege of old men and young boys to follow the dictates of comfort in discarding clothes. But a white woman! He couldn't figure out what she might think, or say, or do.

I wanted a picture of the women and their drying peaches, so 114 focused my camera. The women threw their *sutams* over their heads and ran screaming to hide behind the rocks. It was the

The Day the Mail Did Not Go 173

I tried, but swallowed hulls with the meats, so gave it up.

Kate replenished her supply by pouring dried seed¹ into her basket, scraping in live coals, and tossing them together with a rhythmic motion that kept seed and coals in a lively dance until the former were delicately browned. Changing the motion, she eliminated the coals as dexterously as a miner washes sand and dirt from his panned gold. Kate was ready to mill her second batch. Her ample body overlapping her fat legs called for a health talk on the dangers of overweight, but these carefree villagers had robbed me of the mood to lecture. Even to improve the health and the appearance of her body, I could not wipe that look of supreme enjoyment from Kate's pleasant face.

An older woman, bent over a basket she was weaving, sat on a blanket near the entrance to the house, her face lined with anxiety. In working out her design she was using the black bark of the devil's claw (two-pronged seed pod of the unicorn plant) against the white inner bark of the osier. There was something arresting about the woman's dejected posture and the wild, frightened look in her black eyes.

"Yunosi make new basket," Kate volunteered. She held up the basket she was using to show me its burned and broken condition. "I burn," she explained with a giggle. "Make new. I use."

Yunosil That name explained the drawn muscles of the woman's face, the look of fright in her eyes. Only the previous week Bob had come to the office asking for medicine for Yunosi. His sister, he called her; but the terms sister, brother and cousin were loosely used to denote almost any blood relationship. From him I had learned her story.

As the wife of Chief Navaho's son, she had held an important position in the tribe. Her husband had been a good mixer; he had liked and befriended white men, and had learned enough English to converse intelligently, and from him Yunosi had learned many English expressions. A deep and lasting love blessed their union, so that after his death, she had more than the usual fear that his spirit would hover near her, unable to leave the one to whom he was so devoted.

¹[i.e. sunflower seeds — Analyst]

194 *People of the Blue Water*

648 And the gods spoke—through a storm cloud—deciding the issue
776 with one swift blow. Work was progressing toward completion
when a flood roared down the canyon, wiping out the widened,
costly trail, demolishing the equipment that had disfigured Mooney
Falls, and causing the firm such financial loss that the project was
abandoned. The white men rode out, one afternoon, over the
hastily repaired trail, leaving the canyon to the people to whom it
rightfully belonged.

776 The power of the gods was manifest once more, renewing cour-
age and inspiring the whole village with fresh vitality. The people
worked in homes and gardens, their former cheerfulness restored
by this assurance that the gods who had led them to the canyon
and taught them the skills by which they had survived, were still
able to defend them.

Their faith in their gods was so sincere, and they spoke of them
with such candor, that I might easily have learned how much of
their culture the Havasupai attributed to this source. To meet their
spiritual needs, they had their god-given songs and dances. To
care for their sick, the gods had taught them how to make the
tobolwa and the songs to be used in the healing ceremony. When
they needed fire, the gods, through Coyote, had lighted the torch.
These things I knew, but there was so much that I had failed to
learn. They traced every skill to a time in the dim past when Those
of Old were instructed by the deity. Now it was all too evident
that some of these skills were falling into disuse.

177 They had been pottery makers but tin cans and lard pails had
285 taken the place of clay utensils. Happily, baskets were still plenti-
415 ful in every home. They were strong and somewhat coarse in order
252 to stand up under the rough usage as toasting baskets, burden
baskets, water bottles and general containers. However, the water-
tight cooking basket, used by their ancestors, into which heated
stones were dropped to keep the contents boiling, was now a relic
of the past. The imperfectness with which these cooked the food
and the constant attention they demanded, doomed them to this
fate. As the stones had cooled, they were replaced with others fresh

The Gods Speak Again 193

from the bed of hot coals. Broken pieces of stone always had to be picked from the food. So these cumbersome vessels were discarded as soon as other containers were available. But the horn spoon, shaped from the horn of mountain sheep, was still in use. Making it was a tedious and lengthy process. The horn was soaked in water, then buried in moist sand until somewhat softened. The next steps—heating, oiling and fashioning the horn into a spoon or ladle—required the skill of long practice. Tin cups, obtained at the trader's store in Seligman, were gradually supplanting the horn spoon, and another skill would soon be forgotten.

In a report on conditions in the canyon for the year 1898, the acreage in cultivation and under fence was estimated at three hundred twenty-five. One thousand bushels of corn and fifty bushels of wheat were grown that year, in addition to an abundance of vegetables and fruits. And the tribe had a cash income of four thousand dollars. At that time, tribal affairs were managed almost wholly by the chief and head men, although the school had been in operation for three years. From the seeds their gods had given them, the Havasupai had reaped their independence.

They preferred their old system of barter and trade to a cash sale. The Navaho were silversmiths and weavers of warm blankets, while the friendly Hopi and Walapai had ponies or goods to trade. A Havasupai could measure out a small tray of beans and—after endless good-natured bargaining—exchange his beans for a fine Navaho blanket. Two spirals of their dried pumpkin or squash had the same value.

Every man of consequence kept a pony in his dooryard and sprang to its back to ride the short distance to a neighbor's wickiup. So horses were eagerly sought. A Hopi pony cost a large well-tanned buckskin or as much shelled corn as a large burden blanket could hold. A man traded, or made gifts, for the girl he wished to marry, presenting her parents with ponies, blankets or grain to the value of about twenty dollars, if the girl was popular. Ten dollars in trade was a fair price for a lazy girl.

The men, of necessity, had developed skills. The tribe needed to

202 *People of the Blue Water*

222 would comb the desert for the piñon nuts, oily and pungent, as
262 they fell from the pine trees. The desert, which yielded its store of
food to those who knew where to search for it, was ripe for the
harvest.

221 Each day one or more groups climbed the trail, bound for
222 Seligman to loaf about the trader's store, or for the pueblos of the
Hopi or the scattered villages of the Walapai. They would denude
the plateau of its food plants as they traveled. Laughing, shouting
back merry good-bys to us, they climbed the trail. The canyon
seemed full of empty houses.

221 From their talk I gathered a clear picture of their life on the
262 upper level. They would kill an occasional deer or mountain
224 sheep, if no white man were about; even without these there
would be meat, for rabbits were plentiful. They satisfied their need
for sweets by robbing bees' nests hidden in clefts in walls or in
hollow trees. Long ago they had found a cave in a distant cliff
[316] that contained more rock salt than they could use. So with veg-
etables, meat, salt and honey in addition to the supplies they took
with them, their needs would be satisfied.

221 When harsh winter set in, they would retire to their small, tight
361 winter houses in the cedar thickets and live off their stored foods.
262 One of the most delicious of these was the corn that had been
roasted in the husk, while fresh and green, dried somewhat and
stored. They would cook the ears in boiling water and the grains
would have the sweetness of fresh corn.

252 Those who had not bothered to bring cooking pots, drew on
824 the desert's reserve by burning the spines from a section of barrel
cactus, removing the center pulp, and using the cavity for the old-
time method of stone boiling. Accustomed to making the most of
the things at hand in the desert, on the mountains, or wherever they
might be, the women cooked mush and boiled vegetables or meat
in the unique container, giving no thought to the hardship in-
volved.

221 Melting snows and swelling buds would start the wanderers
222 leisurely homeward, pausing on the way to reap a rich harvest

Exodus 203

from the agave, commonly called the mescal plant. Families worked in groups, first testing the plants for ripeness by thrusting a sharpened stick into their hearts. If they were soft and juicy, the harvest was on. With a wooden wedge the women pried the entire plant from the soil, cut away the outer leaves and tossed the fibrous pulp into their burden baskets. A large pit was dug, wood put in, set on fire and covered with stones. Someone accustomed to the task piled the hearts into the heated pit, using a cross layer to separate the mescal belonging to one family from that of another. These tasks were performed with high good humor. When the pit was filled to a depth of four or five feet, the mescal was covered with a layer of grass and leaves, on which dirt was piled to hold the heat. At the end of two days, the hearts were soft and brown. Each woman took her share, spread it on a wide stone surface, and pounded it into a thin sheet three feet wide and twice as long. This was quickly dried in the hot sun, then folded into a slab for convenient storing. 221
222
250
[251]

The mescal pit yielded the brown paint about which Carl had told me at Truxton. The stones on which the plants rested in the roasting pit were heavily coated with the burned juice. This was either scraped from the stones or soaked in water which was later evaporated by boiling. When the right consistency was reached, red mineral paint was added to thicken it to a putty-like substance of the desired shade for facial decoration. 386

My successor finally arrived. He was young, friendly, quick to co-operate, and his wife was charming. They were a bit shaken from the descent of the trail, and appalled at finding themselves in so deep a gorge, but quickly made their adjustment, and were eager to begin work. I remained for a few days to help them get acquainted with conditions and to check the government property, which I would turn over to him. 000

Again I fitted my things into the clumsy packsaddles, this time for the trip out. As I packed, the remark made by an Indian lad to a lazy boy who refused to work, ran through my mind: "Well, what are you going to do—just stand there and breathe?" With

2, JAMES T-5 (ca. 1900) 1903

NT14 PUMEN TUMES NT14

Ho wapei
Wahpai

252
392
291
516
531



A WALLAPAI WOMAN POUNDING ACORNS.

252
415
285
531



CHICKAPANAQIE'S WIFE, A HAVASUPAI, PARCHING
CORN IN BASKET.

[Facing p. 210]

PAINTED DESERT REGION 241

English of a number of words, and all during the day I heard him repeating them over to himself, and seldom would he need correction. 192
153

The dress commonly worn by the women consists of a short skirt and waist, made of colored calico, and a *si-dram-a*, which may be described as a rude shawl, two corners of which are tied obliquely across the chest. When at work this is often slung over one side of the body so that one arm is free. Among the Havasupais the *si-dram-a* that is most desired and sought after is one made of four large bandana handkerchiefs, with red as the choice of colors. 241

The men, when I first visited them, seldom wore anything more than the breech-clout except in cold weather, but as school influences began to permeate the village, blue overalls and the cast-off trousers and other clothing of the white man were donned, until now it is a rare sight to see a man clothed in any other than the ordinary fashion, though the influence of the outside Indians is seen in the Spanish "cut" of all home-made garments. Moccasins are the common foot-gear, though occasionally a man or woman may be found wearing "civilized" shoes. [177]

Fish, pork, chicken, all kinds of birds and eggs, are tabooed as food by the Havasupais, but they eat rats, deer, antelope, rabbit, prairie dog, and mountain sheep. They are especially fond of beef, and horse and mule meat, no matter how the animals come to their death, are esteemed luxuries. They will even eat lizards and lice. 262

The prickly pear and the fruit of the amole, or hoshkon, are much favored when ripe. The latter is roasted in the coals until the outside is completely blackened. [252]

242 THE INDIANS OF THE

- 252 A hole is made in this carbonized surface to let out the
262 steam, and, when cold, the fruit is eaten as a great delicacy. I have often eaten and enjoyed it, though it has a sickish-sweet vegetable taste that at first is somewhat unpleasant. The pinion nut, sunflower and squash seeds are also regarded as delicacies. Practice has made the Havasupais dexterous in eating these husk-covered seeds. The novice finds it a wearisome task to hull them, but the expert throws a handful of seeds into his mouth, cracks the shells, and by skilful manipulation eats the nuts on one side of his mouth and expels the shells on the other. When I can do this I shall make a meal on pinion nuts, as they are of exquisitely sweet and delicious flavor.

Sunflower seeds, squash seeds, and a variety of wild grass seeds and corn are parched by the women by placing them in saucer-shaped baskets—or *kū-ūs'*—with hot ashes, and then tossing them up and down and to and fro until sufficiently cooked. The seeds are then scooped out with the fingers, and ground on a slab of basaltic rock, by rubbing one stone over the other. On the occasion of one of my visits, when I was the guest of Chickapanagic, I made the accompanying photograph of his wife as she thus parched corn in a basket. It was the placing of a covering of clay inside the *kū-ū*, to prevent its burning, that led Frank Cushing to the belief that here was the explanation of the origin of pottery.¹

Green squash is cooked after being hacked into pieces in an apparently reckless but most effective manner. With the squash in one hand, the woman takes a large

[113]

¹ See chapter "Basketry the Mother of Pottery," in "Indian Basketry," by George Wharton James.

PAINTED DESERT REGION 243

butcher knife in the other and strikes indifferently at the squash, turning it around and at different angles the while. In a few moments chips, as it were, begin to fall into the cooking pot, and after the exterior is cut and hacked in every direction the cook begins to slice it into the pot. When well cooked, it is eaten without any other improvement than a little salt. [263]

Corn and beans are plentiful with them, and both are as delicious and tender as any I have ever tasted elsewhere.

Mescal is one of their chief foods. It is made by them exactly as the Wallapais make it. That fibrous portion of the plant that cannot be treated in this manner is boiled, and the drink therefrom, when fresh, is a sickish-sweet liquid, that, however, might soon become agreeable. This liquid is of a dark brown color, and when boiled for a long time becomes a species of thin molasses. [272]

The Havasupais know no process of fermentation so far as I have been able to learn, and the elders of the people long objected to the coming of the white man because one of the bad things he brought to the Indian was whiskey and other intoxicants. 273

Quail and ducks abound in various parts of the Havasu Canyon region. Even to this day many of the latter are shot, for sale to the white man, with the arrow instead of the gun. The Havasupais claim that the arrow is far less liable to scare away the flock than is the loud report of a gun, so they keep up their practice with the antiquated bow and arrow, and some of them show wonderful skill in their use. I have often placed a ten-cent piece in a notched stick and enjoyed watching the young men as they fired their arrows at it at a distance 136 223 411

Materials used for coiled baskets are more carefully prepared than those for twined baskets. Both warp and weft twigs are denuded of bark. The weft twigs are split into three strips in the same manner as for twined baskets, and the pith is carefully scraped off and both sides of each strip scraped smooth. In addition, each weft strip is sized by drawing it through a hole punched in the lid of a coffee can or something similar. One weaver used a gradation of five or six holes for sizing strips for miniature baskets 2 to 3 in. in diameter up to trays 1 ft. or more across.

Whiting (1952, 64) identifies the materials used in basketweaving as follows: For woven elements squawberry is preferred; cat's claw is strong; and cottonwood is considered inferior. For rims, service berry, Apache plume, and mesquite are favored. For decoration, squawberry and devil's claw are used. Spier (1928, 128) cites *Acacia greggii* (cat's claw) as the best material for twined baskets and notes (p. 133) that cottonwood is used for coiled baskets. Materials observed most frequently in use in 1950 were those noted by Spier.

Women also wove sleeping mats, but they are no longer used. Cradleboards, also made by women, continue in general use.

The Food Complex

Cooking and storage methods, together with degree of utilization of the available food supply, furnish an excellent index to feminine ingenuity and readiness to accept new ideas. Cooking methods and exploitation of the environment for foods, and probably food storage also, are traits extant in every culture.

Food Sources

The Havasupai food supply under primitive conditions was sometimes meager but included much variety. Cultivated foods included corn, beans, squash, peaches, and sunflowers, and a wide variety of wild food plants were harvested for seeds, leaves, or roots. Foods were prepared singly or combined in numerous ways. Cooking was by stone boiling, parching, baking, and broiling, and oftentimes two of these methods were used in preparing a single dish, for example, parching and boiling.

Whiting lists aboriginal cultivated food plants as corn, squash, tepary beans, lima beans, kidney beans, and Hopi sunflowers. Foods introduced include the peach, fig, apricot, plum, pear, apple, watermelon, walnut, and blackeyed pea. Other foods introduced but rejected or little used include the onion, chili, sweet potato, tomato, peas, almond, cherry, and wheat (1952, 60).

252
142
(231)
177
415
402
516



Fig. 19. Women grinding corn. A. Edith Felmsy prepares green corn for johnny cake type of bread. B. Mamie Chick grinds dried and parched corn.

Most popular foods today still are corn, beans, squash, sunflower seeds, peaches, and figs.

[241]
824

Wild plants utilized, according to Whiting, were the following: goose-foot, peppergrass, muttongrass, wormwood, tansy mustard, blanket flower, gilia, blazing star, pinyon, amaranthus, shepherd's purse, June grass, Indian millet, marigold, cat's claw, mescal, juniper, desert thorn, prickly pear, mesquite, squawbush, broad leaf yucca, Mormon tea, Lippia wrightii, agilia (unidentified), watercress, Indian pipe weed, and desert plume (1952, 103, 105, 106, 113, 114, 115). He reports that watercress was introduced.

[177]

Preparation of Food

Grinding corn was one of the most laborious and time-consuming tasks a woman had to perform under aboriginal conditions, but women grind less now that they can obtain wheat flour and other commercially prepared food. A number of families have purchased handpowered machine grinders, and almost without exception these are preferred to the metate, because meal from the latter always contains grit.

252 ●

[177]

A woman sits at her metate or grinding stone (pi'), her legs turned sideways beneath her, leaning slightly forward so that her weight is balanced over her knees as she reaches toward the far end of the stone. She has two sizes of hand milling stones (va-djk). Grasping the larger stone, she first uses an end of it to break the dry corn kernels (younger women may or may not use this method). The hand stone or mano is held in both hands for grinding, and the woman places a pile of corn on the end of the metate nearest her. The mano is moved away from the woman, and on each third or fourth backward stroke, a few more kernels are caught beneath it with a rocking motion and a slight pause in rhythm. The smaller mano is used on the same metate to reduce dry corn to a finer graininess or to crush green corn to a pulp. It is questioned whether the smaller size of the second stone is significant; it seems more likely that a harder, smoother texture of the stone itself is the pertinent factor.

[516]

No attempt is made here to inventory recipes used by the Havasupai, but a few examples are described.

Soup or mush was one of the dishes most commonly prepared. It varied from a clear, watery consistency to a thick paste. Ingredients ranged from dry or green corn to crushed seeds of various wild plants, which might be boiled singly or combined in numerous ways. Soup or mush was eaten unseasoned, or flavored with salt, squash blossoms, or marigold.

252
262

Dumplings were made from dry corn, cooked to a thick paste, or from green corn shaped into balls and dropped into salted, boiling water.

252 Corn was also boiled or roasted in whole ears and eaten at once, or the
262 husks were pulled back to permit drying for storage.

[251] Squash was cooked, fresh or dried, in boiling water and usually was not
combined with other foods. For storage, the squash rind was hacked off,
and the meat was cut spirally in a long strip which was folded up loosely
and tied to the house rafters or outside to dry. For use, dried strips were
broken off and boiled in salted water.

Beans were prepared much the same as dried corn, either ground into
flour and boiled as soup or mush, mixed with other ingredients, or boiled
whole.

[177] In a lengthy process, mescal was roasted in an earth pit with heated
rocks and hot coals. Bread made from corn meal or the flour of wild seeds
was also baked in a pit oven similar to, but smaller than, that used for
roasting mescal. The Havasupai formerly had no other form of oven, but
today many families have wood-burning cooking stoves.

252 Another method of baking which Whiting (1952, 111) traces to Hopi con-
262 tact, was the use of a flat, smooth stone supported over a small fire by
177 several other stones turned on edge. The flat stone surface was greased
with pumpkin seeds or suet, and a thin flour batter made from parched blue
or white corn was spread over it. The bread cooked quickly, curling around
the edges. It was peeled from the stone in sheets while still pliable and
rolled up for storage. Whiting called this bread pika from Hopi piki, but
this investigator recorded dis' -vā' i -lēt. Only a few of the older women
know how to make it. Informants referred to this baking method as "frying,"
possibly because a thin veneer of oil was applied to the baking slab, but
Spier (personal communication, 1957) rightly points out that this is not true
frying. He remarks further that, offhand, he was unable to recall any North
American tribe which used frying aboriginally. Hopi and Zuni piki bread is
baked rather than fried.

252 The most popular bread eaten today is the tortilla made from wheat
262 flour, salt, and water, usually with baking powder added. It is baked on a
wire rack over an open fire reduced to coals, although in cold weather it
may be cooked on an inside stove with or without grease. Tortillas are the
mainstay of daily fare, usually being baked fresh every meal. Small pieces
torn from them are often used in lieu of a spoon to carry softer food to the
mouth.

Cornbread, made from green or dried corn and baked in a wood-burn-
ing stove or wrapped in husks and baked in an earth pit, continues in popu-
larity. Sometimes wheat flour is added to it.

Various butters were made from piñon nut meats, parched sunflower,
watermelon, or pumpkin seeds, or seeds of certain wild plants. These are

compared to peanut butter in consistency, but each seed had an individual flavor. Parching was accomplished by putting hot coals in a tray with unshelled piñon nuts, corn, or seeds and shaking vigorously to prevent burning. Piñon nuts were shelled on a metate and tossed in a winnowing tray while the shells were blown away. Piñon nut butter was sometimes mixed with roasted dried cornmeal to make a thicker paste. Young people compare piñon nut butter unfavorably with peanut butter, because it was drier and always had tiny shell fragments in it.

252
262

Drinks were prepared from peaches and other fruits which were cooked until pulpy, thinned with water, and sweetened after sugar was available. A refreshing drink was made from mesquite beans pounded gently on the metate to break the pulp membranes but not the seeds. The mashed beans were soaked but not cooked, and the pulpy substance was squeezed out before use.

272
262

Meat was boiled fresh or dried, roasted in a pit, or broiled over an open fire. Pit roasting was the favored method for most game because natural juices and more flavor were retained. Certain small animals such as the rabbit were boiled, the water sometimes being thickened with corn or bean flour.

252
262

Fruits were eaten in season fresh or occasionally stewed. For storage, berries were dried whole, and larger fruits, to speed the drying process, were split open and pitted. Figs and the pulpy fruits of prickly pear, mesquite, and roasted mescal were mashed on the metate and kneaded into flat cakes for drying. One woman observed preparing to dry what she called fig bars, rolled the pulp into figure eights, then flattened them gently to close the holes.

251

Foods are left outside until cold weather, then stored inside the houses. The storage cists located along the talus slope throughout the canyon are no longer used, but a few families continue to use the shelf of the talus slope, in favorable locations, for drying fruit.

[343]

Several younger women today process a small amount of fruit in jars. [177]

THE HAVASUPAI

sis, and blankets is owned individually. Each one can dispose of his 422 possessions independently.

The Havasupai is an excellent horseman and packer. He usually 492 has quite a number of horses and does considerable packing on the trail with them. Traveling up and down the steep winding trail to the top of the canyon is very strenuous work for the horses and the Indian must have a sufficient number of them so as to rest each horse for a few days after one of the trips.

When first visited by the white man these people dug holes with 241 stone hoes, planted their seeds, but did little cultivating. Only a small acreage was planted, this being irrigated from small ditches running 212 from dams of rock, logs, and willows piled in the river. Methods of farming are still simple. The ground is first plowed and then cultivation is done with a hoe; some rotation of crops is practiced from year to year. Irrigation ditches now serve over a hundred acres of land.

The Havasupai are among the most conscientious farmers in the Southwest. Their interest centers so firmly in their fields that when remunerative employment is to be had at Grand Canyon the men will leave the work with semi-monthly pay to plant and tend their crops. Planting begins in the middle of April, but previously the fields are cleared of weeds and brush, plowed with a one horse walking plow, and irrigated two or three days before planting. 408

The tools used are a planting stick about an inch wide and a foot 241 and a half long with one end cut wedge-shaped, and a modern hoe with 412 a blade at an angle to the handle. Formerly a wooden spade-shaped hoe with an extra long handle was used; also, the shoulder blade of a horse was held in the hands and used to scrape the sand out of irri- 237 gating ditches and for scraping out weeds.

Planting is an occupation that most of the family takes part in; 241 even the small children help dig holes. The corn is not planted deep, about three and one-half inches is the usual depth. The lines for the rows of hills are generally drawn with the foot. Kneeling, the first hole is dug with the planting stick; the soil is loosened, and eight or ten seeds dropped in. However, before putting the kernels in the first hole the planter says a prayer. Filling the hole, he takes two or three short steps forward, kneels, digs a second hole, and plants. This he continues until the field is planted.

The planting is not all done at one time but extends over a period of two months. Beans are planted on the same day as corn and placed half way between the corn hills. Both crops ripen about the same time.

When the young corn shoots are about two inches above the ground, they are given a second watering. When the tassels appear, about two and a half months after planting, the corn receives a third and last watering. The fields are weeded at regular intervals and traps are placed for rodents which would otherwise destroy a portion of the crops.

The Havasupai plant a small variety of corn, with ears about six inches long, known as Mohave corn, which will yield ears in about two months. Other varieties ripen at intervals from mid-August until the last of September. When the ears are ripe, they are gathered in burden baskets. The gatherer breaks off the ears and throws them in the basket on his back while he walks along. The corn is dried on the 251 roofs or on brush heaps. It may be placed in the storage chambers either in the form of husked ears or shelled and piled in a corner. Seed corn is always husked and heaped in a separate pile in a corner. Watermelon, pumpkin, sunflower, and squash seeds are dried, put in cloth sacks and stored in the storage chambers. Beans and corn ripen at the same time and those beans not eaten green are dried and stored in stone chambers for winter use.

The Havasupai have innumerable ways of preparing corn. Only 252

ARIZONA STATE TEACHERS COLLEGE AT FLAGSTAFF

252a few are given here. Green corn is usually shelled or cut from the cob and mashed to a pulp on the grinding stone. Water is heated to almost boiling, the corn slowly added, and the mixture stirred with a stick while the pot remains on the fire. When it comes to a boil, it is set aside to cool. Green corn in the husks is roasted on a bed of coals or buried in hot ashes until the outer husks are charred. The husks are then pulled back and the ears tied in pairs by their husks and hung up until some relatives or friends come calling. The usual way of eating corn on the ear is to break off the kernels with the thumb nail, catching them in the palm of the same hand. A handful is poured into the mouth at a time. Often the pulp of green corn is shaped into balls, wrapped in husks, and baked in hot embers. When the husks are removed the balls are eaten as bread. Green corn is sometimes cut from the cob, crushed, and boiled with unripe pumpkin cut in small pieces. A favorite sweet dish is made by boiling squash blossoms until tender, then mashing them to a pulp on the grinding stones. Meanwhile green corn, cut from the cob, is cooking in a pot over a slow fire. The pulp is added to the corn and boiled until thick.

241 Squash does not ripen until October. It is gathered in burden baskets, brought home and piled up. Later the rind is cut off and the seeds and center pulp scraped out. The flesh is cut out in strips and hung in the sun to dry. While still pliable it is made into bundles and dried thoroughly before it is stored for winter use. Squash prepared in this manner will keep indefinitely.

Fruit raised by the Havasupai is well known for its fine flavor. The women halve the ripe peaches and lay them out on the roofs or rocks to sun dry and then store them away for winter use. Figs are also dried. Some of the fruit is ground on the *metate*, pressed into large cakes and packed away.

251 Much of the beef and game is roasted and boiled while fresh, but often it is dried to preserve it. The meat is cut in long thin strips and hung in the sun to dry. It is generally necessary to pound this jerky with a pestle before it is cooked and then it is commonly stewed with dried squash or corn. Bean flour also may be added to thicken the stew.

222 In addition to the cultivated crops, the Havasupai gather several wild plants which are a valuable adjunct to the food supply during the winter residence on the plateau. The piñon nut forms an important part of their diet. In good years these nuts are gathered in large quantities during the fall and winter months by the women and children on the land high above the canyon. Some of the nuts are ground

262 on the *metate* into a paste resembling peanut butter.

272 A drink is made of dried mesquite pods. The pods are crushed on the grinding slab, stirred into water, and the mixture allowed to stand several hours, after which the drink is ready for use. A variety of seeds—pigweed, goosefoot, and numerous others, are gathered and utilized in various ways. Some are roasted on parching trays and ground and the meal added to boiling water and made into mush. Pigweed leaves are boiled in salted water and eaten like spinach; sometimes corn meal is added.

222 The mescal (the agave plant) is considered at the right stage for eating when the flower stalk, which shoots out from the center of the plant, is a few inches high. The plant is severed by pounding a chisel-shaped buckthorn stick or stone axe against its base. The outer leaves of the inverted plant are trimmed of their green portion with a hatchet or butcher knife. A party of several families goes out and gathers mescal and brings it to the place where it is to be cooked. A pit which may vary in size but usually is about three feet in diameter and one and a half feet deep is dug in sandy soil, not in gravel because the steam would escape. Wood and brush are piled into the hollow to the height of a foot or more above the ground. Stones the size of a man's

THE HAVASUPAI

fiat are spread over this to a depth of about five inches. A fire is then built and allowed to burn until the wood is nearly consumed and the stones are red hot. Several men pound on the pile to reduce it to about ten inches below the surface of the ground. The women have the mescal piled around the pit conveniently at hand. The pit is divided in sections among several families; when the mescal is put in it, some plants are placed on edge to mark these divisions; the others are packed in between. The mescal is covered with grass, canvas, or gunny sacks—and over the top a layer of wet sand is thrown. Forty-eight hours is the usual time required for roasting mescal. Occasionally some of it is dried and ground into a meal from which several dishes are prepared. 252

The fruit of the prickly pear cactus ripens in September and is gathered in great quantities. The fruit is broken off with tongs, rolled in the sand with a brush of twigs, and finally rubbed with a piece of cloth to remove the spines completely. Basketful are carried home, the fruits opened and spread on arrow-weed mats to dry in the sun. 222 [251]

The fruit of the yucca ripens in September and is found in abundance on the land above the canyon. A layer of this is arranged on a bed of dry sticks, about three feet in diameter. The sticks are fired until the rind of the fruit is burned black, then it is removed, thrown into a pile, and sprinkled with water. The burned rind is removed and the seeds separated from the pulp. The pulp is spread to dry on a layer of grass or Mormon Tea sprigs. The dried yucca sheet is folded and stored. Pieces are broken off and eaten dry or they may be cooked. 222 252

The Havasupai women take pride in their hair, washing it weekly in a yucca suds—a soap substitute made from the roots of the narrow-leaved yucca pounded into a pulpy mass and dried. After being thus washed, the hair is soft and glossy. 515 [24]

The Havasupai house (hawa) cannot be classed as either a wickiup or Hogan. Some are built of willow brush, conical shaped like a tepee; others are constructed like a tent with horizontal ridge pole at the top and a few are built with straight brush walls and a flat roof covered with dirt and thatch. Floors are of dirt and are not treated in any way. The loose sand and trash that accumulates is swept back from the center of the house against the walls and after a time the structure appears to cover a slight depression. Saddles, hides, and other possessions are pushed into corners. Many of the belongings are stored in paper cartons and lug boxes. The cooking is done on a wood burning stove or open fireplace in the middle of the floor, the smoke escaping through a hole in the roof. Living in their remote canyon where everything has to be packed in on horses over a steep winding trail, the Havasupai have few modern household goods. 342 [35] [352] [354]

At night, blankets or small thin mattresses are spread on the ground to provide beds. In the morning, all the bedding is rolled like a cowboy's bed roll and piled along the wall. A few families own modern beds, but the ground is generally used. Beds are usually placed with the head to the east; in this position the sleeper will be free from troublesome dreams, will rest well, and arise refreshed. 513 [171]

Some years ago the government built for the Havasupai a number of two-room frame cottages, but the Havasupai would not give up their old ways. They stored their farm tools, melons, squash, and other supplies in the frame houses and continued to live in thatched houses close by. Today most of these houses are occupied by the Indians at least a part of the year, but some claim the government built houses are too hot in summer and too cold in winter. 177 342 648

The construction of these houses probably has had something to do with the diminishing custom of storing surplus food supplies in cavities in the rock high up on the canyon wall. In olden times each family had its own storage chamber which was sealed up with rocks and mud. 343 423

ARIZONA STATE TEACHERS COLLEGE AT FLAGSTAFF

343 plaster. Marks were made on each seal so that the owner could readily identify it. These high storage chambers always kept the Indians' food supply safe from the floods that rushed down the canyon at times. The summer climate in Cataract Canyon is very hot. The rock walls absorb the heat of the sun during the day and only a part of this stored heat is radiated during the night.

252 Most of the tribe live much of the time out-of-doors. The cooking is done over an open fire and the other household work is performed under trees and brush shelters. In winter the sun lingers only six or seven hours between the cliffs, imparting but little heat, and the nights and mornings are very cold. Because of this and lack of fuel, most of the tribe leave the canyon during the winter months and live on the plateau around the head of Toiyabe Trail on the east. Here there is plenty of pine wood for fuel and good grazing for the horses. On the plateau, the house is a sort of hogan of logs and earth, more solid in construction than in the canyon.

264 In the summer most of the cooking is done out-of-doors and the meals are served there also. The cooking pots and pans, baskets of fruit, trays of bread, water bottles, and coffee pot are placed together on the ground. A large vessel containing ground rock salt always stands nearby, but very little is used, and practically none at all in the process of preparing food. The family groups sit about these, sitting on the ground or on boxes within easy reach of the main dish of the meal. Sometimes plates and spoons are used, but usually pieces of meat and vegetables are fished from the stews with the fingers, twigs, or knives, while mush is scooped up with chunks of bread. Generally the women and children eat with the men, but when they are visiting male relatives or friends they usually wait until the men are through.

252 Cooking utensils are of the simplest kind—cheap tin kettles, lard cans, and tin buckets. Some characteristic Indian utensils are still in use. A shallow basket woven of willow splints, lined with a coating of red clay, stewed peaches or other sticky substance, is used for roasting pison nuts and corn. Hot coals are put in the baskets and shaken around until the nuts or corn are roasted.

252 The conical shoulder-hung basket is still in use for gathering vegetables and fruit. The metate stone for grinding wheat, corn, acorns, and pison nuts is extensively used. The metate is a flat slab of hard stone (the mano) held in the hands. When not in use the metate is turned upside down with one edge resting on the mano to keep it off the ground. A brush made of mesquite leaf fibre is used for cleaning the metate. Stone mortars, and pestles, are used for pounding dried meat, pison nuts and corn, also.

177 The Havasupai have adopted the white man's mode of dress. The men wear overalls or corduroy trousers, blue cotton shirts, jumpers, large cowboy hats, and boots or shoes. Their hair is cut short. The women wear long, wide-skirted dresses, which they make themselves, of calico and print in the brightest colors obtainable. Ten yards is the usual amount of material required to make a dress. The hair hangs down in long bangs over the forehead so it almost obscures the eyes. It is cut shoulder length in back. Their hair dressing is about the only thing distinctly Indian unless it is the brightly-colored handkerchief tied loosely about the shoulders. Shoes are of American manufacture, a high top, low heel lace shoe for the older women and oxfords for the girls and young women. Moccasins are sometimes worn by the older men and women. During the warm weather the women and children go barefoot around camp.

291 Formerly both men and women wore moccasins. The man's moccasin consisted of two pieces. The sole was made of the thickest part

342

252



An old-style conical house with a cooking shelter in front.

342 they are cooler in the summer and can be kept warmer during the cold weather. Many of these old-style houses are conical in shape but most of them are longer than they are wide and have sloping roofs of dirt which nearly reach the ground on either side. Very few of them are made of stone.

241 In passing through this wide part of the canyon one may see a great many small fields. Most of them are planted with corn but close examination shows that growing in the same fields between the corn plants are beans, squashes, pumpkins, sunflowers, watermelons, tomatoes and potatoes. Many of these plants were introduced after white contact, of course. (172) and among them are the fruit trees which stand in orchards in some parts (245) of the canyon and grow along the trails everywhere. Peaches, apricots, figs, pears, and apples are now part of the standard diet in Supai and even pecans, plums and pomegranates are grown.

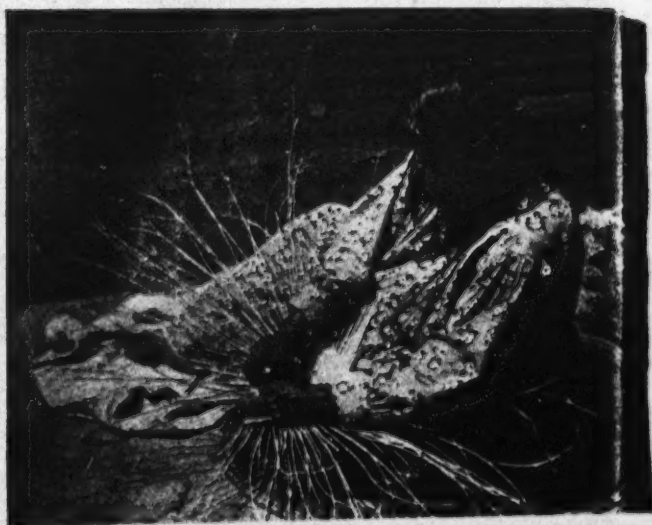
415
● 252
516



Though many Havasupai women use modern metal corn grinders, some still prefer the metate and mano.

Lina Iditcava is one of the oldest as well as one of the best Havasupai basket-makers.

285
516



[p. 42]

12: Cushing E-5 (1881) 1882
NT14 Plateau Yumani NT14
Havasupai

304 in the pulling out of the beard, although
302 whiskers are sometimes permitted to
grow in front of the ears; beside occa-
sional mustaches, faint goatees are af-
fected by the young. Scarifications, for
ornaments, are not unknown.

515 The women, both old and young, are
remarkably careless of personal clean-
liness and appearance, nor are the older
men superior to them with reference to
cleanliness. The young men, however,
are noticeably neat in the care of their
persons, frequently bathing in the river,
and careful of their toilet and dress.

241 I have mentioned the things which
are cultivated by the Ha-va-su-pai. On
these, as on various roots, wild plants,
and fruits, they depend for their vege-

252 table food. Green corn is variously
262 prepared: it is roasted, or boiled in the
ear; or cut up and cooked with beans,
bits of deer suet, etc., it forms the suc-
cotash of the more eastern tribes, and

[412] of historic celebrity. Crushed on a met-
lad with a little flat grinding-stone or
muller, together with green squashes, so
as to form a pulp, it is then boiled,
when it becomes gelatinous, resembling
the poi of the Sandwich Islanders. Like
it, also, it is eaten with the two fingers.
Sunflower seeds, toasted by being shaken
together with live coals in an earth-cov-
ered basket tray, then ground, formed
into patty-cakes, and slightly baked in
the ashes, are eaten as a relish with
these and other dishes, in the absence
of meat. Indeed, this curious sunflower
food takes the place, to a great extent,
of meat during the summer months.

251 The corn, while still green, is some-
times prepared for storage, by being
roasted, husks and all, in hot sand, while
the ripened corn is merely dried on the
ear. Food is made of the latter, either

252 by simply parching, or by grinding into
meal. The meal, coarse or fine, is then
used for sampas, mushes, or batters, and
cakes, thick or thin, and of many va-
rieties and degrees of wholesomeness.
[262] Melons, pumpkins, peaches, and apricots

[P. 549 A]

12: Cushing E-6 (1881) 1882
NT14 Plateau Yumans NT14
Havasupai

262 are all eaten raw, or dried, and prepared
252 for food by stewing. Squashes are either
boiled or roasted, the latter most skill-
fully, the seeds being carefully pre-
served, dried, and made into food, much
the same as the sunflower seeds.

263 A remarkable and at first unpleasant
characteristic of all these foods is the
absence of salt from them. Sometimes
the corn preparations are sweetened by
chewing and fermentation. The some-
what sweet fruit of the datila, or Span-
ish bayonet, is rendered sweeter by a
like process, the pulp thus formed being
[251] spread out on large, closely-woven splint
screens, and dried in sheets, often sev-
eral feet in extent, though less than half
an inch in thickness. The mescal of the

252 more southern tribes, the ak-na of the
Zufis, is prepared in its greatest perfec-
tion by the Ha-va-su-pai from the heart
and inner leaves of the agave, or centu-
ry plant. It is gathered by the women
in great quantities throughout the gorges
and upon the terraces of the cañon, and
[482] transported in large baskets, strapped
across their foreheads, to the gravelly
beds of dry streams. Pits being dug in
the gravel and fuel collected by the
men, huge fires are built in the excava-
tions, and kept burning for several hours.
The embers are then drawn forth, the
pits lined with leaves and grasses, and
the agave thrown in, a layer like the
lining then being added, and the heated
gravel and embers heaped above. These
[527] burnings are occasions of great festivity
and merry-making. When taken out,
the agave is easily made into pulp, and
dried, either on the flat rock surfaces or
as is the fruit of the datila.

221 It is a remarkable fact that the Ha-
262 va-su-pai, possessing neither cattle nor
sheep, are almost exclusively vegetari-
ans during the summer months. With
the beginning of winter, however, the
tribe, almost as a unit, repairs to the
surrounding plains, where they subsist
chiefly on the flesh of the game they
kill. This is made ready for consump-

The/99 cont. /

131 inaccessibility of their cañon home has tended to keep them
177 immune from outside influences, so that in many ways their
342 life is still delightfully primitive. Their typical dwelling
consists of a framework covered with brush or tule and some-
times with an outer covering of earth. In summer a four-post
brush shelter is erected, which affords protection from the sun and
allows free circulation of air.

262 The agave plant, cut and prepared in much the same way
as by the Apache, has always been an important article of food
among these people. Other native vegetal foods are grass seeds
224 and piñon nuts. From time immemorial the Havasupai have
(221) been hunters. On the approach of winter they left the cañon for
the upper levels, built wickiups of boughs and bark, and
spent the cold season in hunting. Deer were the principal game,
although they killed some mountain sheep and an occasional black
(251) bear. Much of the venison was cut in thin strips and dried for
237 summer use. Deerskin dressed by the Havasupai was considered
281 the best by all neighboring tribes; consequently, it not only
(439) furnished clothing, but was an important medium of barter. But
the life of the Havasupai has changed. Game is scarce, and
177 the Government does not willingly grant them permission to
224 hunt on the surrounding mesas, hence there is little wonder that
648 the wrinkled veterans long for the old days when game was
plentiful and they hunted where they would. "Now all is
changed," they say. "We cannot go out of the cañon without
asking the white man. We dare not hunt deer, as the game must
be saved for the Haiko. We are no longer men; we are like little
children; we must always ask Washington!"

241 Corn is now their chief staple, besides which they raise
262 beans, squashes, melons, pumpkins, sunflowers, peaches, apricots,
171 and figs. They prepare corn in countless ways, corresponding
● 252 largely to those of the Hopi. In fact, the modes of preparing
corn by all tribes of /100/ the Southwest are much the same.
Much of the crop is allowed to ripen on the stalk; this is later
ground into meal on the metate. Quantities of green corn are
harvested, roasted in large pits with the husks on, and hung to
dry. This may be ground or simply shelled and cooked, either
alone or with beans, meat, and dried squash. Like the figs, their